



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J.R. "JOEY" HOPKINS
SECRETARY

April 16, 2024

Chatham County

**Driveway Permit File Number D081-019-24-00003
(Anfield Estates)**

**Re: Commercial Driveway Permit Application with Entrance onto
SR-1008 (Beaver Creek Rd.)**

Zadell Development, LLC
c/o Kyler Zadell
218 Edinburgh Dr.
Cary, NC 27511

Dear Mr. Zadell,

Personnel assigned to this office have conducted a review of the permit application & plans and approval is granted subject to the following stipulations:

1. This approval covers only work associated with the construction of an entrance connection to the NCDOT maintained roadway. This driveway permit is void if work has not begun within one year from the date of this letter.
2. The entrance onto SR-1008 (Beaver Creek Rd.) is to be constructed in accordance with the attached plan sheets.
3. The entrance onto SR-1008 (Beaver Creek Rd.) shall require radii on each side of the driveway as shown on the attached drawing.
4. No parking or outdoor advertising (signs) shall be allowed inside the right of way of SR-1008 (Beaver Creek Rd.)
5. Any areas inside the right of way disturbed during construction shall be seeded and mulched immediately upon completion of construction.
6. Upon completion of construction, final approval by the District Engineer is required prior to opening the access connection for public use (page 9 Driveway Manual).
7. **The Owner/Developer & Engineer is advised that any changes to the approved site plan or construction of any structures which will add additional traffic to the site will require issuance of a new driveway permit and encroachment by NCDOT.**

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
DISTRICT OFFICE
300 DOT DRIVE
ASHEBORO, NC 27205

Telephone: (336) 318-4000
Fax: (336) 318-4010

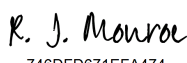
Location:
300 DOT DRIVE
ASHEBORO, NC 27205

Website: www.ncdot.gov

- 8. Any work proposed within existing or proposed NCDOT right of way not covered in the above stipulations shall be constructed in accordance with an NCDOT approved Encroachment Agreement. An approved Encroachment Agreement will show all roadway details including, but not limited to, roadway widening, drainage and pavement markings. When construction activities are covered under both an approved NCDOT Driveway Permit and an approved NCDOT Encroachment Agreement, those construction activities shall be considered to be covered under the NCDOT approved Encroachment Agreement.**

Attached to this correspondence please find an approved copy of TEB Form 65-04 (Driveway Permit Application - N. C. Department of Transportation). Upon completion of the driveway entrances construction please notify the District Engineer Office (Phone (336)318-4000) so a final inspection of the entrances can be made.

Sincerely,

DocuSigned by:

746DFD671EFA474...

R. J. Monroe
District Supervisor

| | |
|--|--|
| APPLICATION IDENTIFICATION | N.C. DEPARTMENT OF TRANSPORTATION |
| Driveway Permit No. D081-019-24-00003 | Date of Application 4-16-2024 |
| County: CHATHAM | STREET AND DRIVEWAY ACCESS |
| Development Name: ANFIELD ESTATES | PERMIT APPLICATION |

LOCATION OF PROPERTY:

Route/Road: **BEAVER CREEK RD / SR 1008**

Exact Distance **1.78** Miles Feet N S E W

From the Intersection of Route No. **1972** and Route No. **1008** Toward **SR1976**

Property Will Be Used For: Residential /Subdivision Commercial Educational Facilities TND Emergency Services Other
 Property: is is not within **CHATHAM COUNTY** ~~City~~ Zoning Area.

AGREEMENT

- I, the undersigned property owner, request access and permission to construct driveway(s) or street(s) on public right-of-way at the above location.
- I agree to construct and maintain driveway(s) or street entrance(s) in absolute conformance with the current "Policy on Street and Driveway Access to North Carolina Highways" as adopted by the North Carolina Department of Transportation.
- I agree that no signs or objects will be placed on or over the public right-of-way other than those approved by NCDOT.
- I agree that the driveway(s) or street(s) will be constructed as shown on the attached plans.
- I agree that that driveway(s) or street(s) as used in this agreement include any approach tapers, storage lanes or speed change lanes as deemed necessary.
- I agree that if any future improvements to the roadway become necessary, the portion of driveway(s) or street(s) located on public right-of-way will be considered the property of the North Carolina Department of Transportation, and I will not be entitled to reimbursement or have any claim for present expenditures for driveway or street construction.
- I agree that this permit becomes void if construction of driveway(s) or street(s) is not completed within the time specified by the "Policy on Street and Driveway Access to North Carolina Highways".
- I agree to pay a \$50 construction inspection fee. Make checks payable to NCDOT. This fee will be reimbursed if application is denied.
- I agree to construct and maintain the driveway(s) or street(s) in a safe manner so as not to interfere with or endanger the public travel.
- I agree to provide during and following construction proper signs, signal lights, flaggers and other warning devices for the protection of traffic in conformance with the current "Manual on Uniform Traffic Control Devices for Streets and Highways" and Amendments or Supplements thereto. Information as to the above rules and regulations may be obtained from the District Engineer.
- I agree to indemnify and save harmless the North Carolina Department of Transportation from all damages and claims for damage that may arise by reason of this construction.
- I agree that the North Carolina Department of Transportation will assume no responsibility for any damages that may be caused to such facilities, within the highway right-of-way limits, in carrying out its construction.
- I agree to provide a Performance and Indemnity Bond in the amount specified by the Division of Highways for any construction proposed on the State Highway system.
- The granting of this permit is subject to the regulatory powers of the NC Department of Transportation as provided by law and as set forth in the N.C. Policy on Driveways and shall not be construed as a contract access point.
- I agree that the entire cost of constructing and maintaining an approved private street or driveway access connection and conditions of this permit will be borne by the property owner, the applicant, and their grantees, successors, and assignees.
- **I AGREE TO NOTIFY THE DISTRICT ENGINEER WHEN THE PROPOSED WORK BEGINS AND WHEN IT IS COMPLETED.**

SIGNATURES OF APPLICANT

| | | | |
|-----------------------------------|--|----------------|---|
| PROPERTY OWNER (APPLICANT) | | WITNESS | |
| COMPANY | ZADELL DEVELOPMENT, LLC (KYLER ZADELL) | NAME | ZADELL DEVELOPMENT, LLC (CARSON ZADELL) |
| SIGNATURE | <u>Kyler Zadell</u> | SIGNATURE | <u>CB Zadell</u> |
| ADDRESS | 218 EDINBURGH DR CARY, NC 27511 Phone No. _____ | ADDRESS | 218 EDINBURGH DR CARY, NC 27511 |

| | | | |
|-------------------------|---|----------------|---|
| AUTHORIZED AGENT | | WITNESS | |
| COMPANY | CE GROUP (JEFF FOSTER) | NAME | CE GROUP (HADLEY JOSEPH) |
| SIGNATURE | <u>Jeff Foster</u> | SIGNATURE | <u>Hadley Joseph</u> |
| ADDRESS | 367 FREEDOM PARKWAY SUITE 220 PITTSBORO, NC 27312 Phone No. 919.367.8790 X-105 | ADDRESS | 367 FREEDOM PARKWAY SUITE 220 PITTSBORO, NC 27312 919.367.8790 |

APPROVALS

APPLICATION RECEIVED BY DISTRICT ENGINEER

DocuSigned by:

R. J. Monroe

746DED634EEA474
SIGNATURE

04/17/2024

DATE

APPLICATION APPROVED BY LOCAL GOVERNMENTAL AUTHORITY (when required)

Jason Sullivan
SIGNATURE

Planning Director
TITLE

1/11/2024
DATE

APPLICATION APPROVED BY NCDOT

DocuSigned by:

R. J. Monroe

746DED634EEA474
SIGNATURE

District Supervisor

TITLE

04/17/2024

DATE

INSPECTION BY NCDOT

SIGNATURE

TITLE

DATE

COMMENTS:

ATTACHMENT FORM

NOTIFICATION FOR UTILITY / NON-UTILITY ENCROACHMENT WITHIN NCDOT R/W

Instructions for use:

This form must be completed in its entirety and submitted directly to the designated personnel in the District Engineer's office via email, fax or hand delivery a minimum of one week prior to construction for the encroachment. If the designated NCDOT personnel names are unknown by the person completing this form, please contact the District Engineer's office to determine that contact info.

Date: _____ Submitted by Name: _____

To: District Personnel Name: Jen Britt
District Personnel Email: jlbritt@ncdot.gov
District Phone: 336-318-4000

This notification is to inform you that we (encroaching party or their contractor) will begin construction work on the following project in a minimum of one week.

Driveway number

(assigned by NCDOT) for the project: D081-019-24-00003

Construction start date: _____

Approximate ending date: _____

Contact NCDOT inspector a minimum of 72 hrs. in advance to set-up Preconstruction meeting in the District Engineer's office or other location as directed by the District Engineer

Preconstruction meeting date & time: _____

Preconstruction meeting address: _____

Type of project: Driveway
[Examples: power, telecommunication, water, sewer, gas, petroleum, other (describe)]

Contact Info for this project:

Contractor Company Name: _____

Contractor Contact Name: _____

Contractor Phone Number: _____

Contractor Email: _____

NCDOT Inspector Name:
Steve Gibbs

NCDOT Inspector Phone:
336-318-4000

NCDOT Inspector Email:
ext-psgibbs@ncdot.gov

NCDOT Project Manager Name:
Tyler Kimes

NCDOT Project Manager Phone:
336-318-4000

NCDOT Project Manager Email:
tjkimes@ncdot.gov

CONSTRUCTION PLANS

FOR

ANFIELD ESTATES

CHATHAM COUNTY, NORTH CAROLINA

JANUARY 26 , 2024

(Revised: APRIL 4, 2024)

| SITE DATA | |
|-------------------------|--|
| PROJECT NAME | ANFIELD ESTATES |
| AKFAR | 5491 |
| NC PIN: | 0700-00-02-0191 |
| OWNER: | KC2 HOLDINGS, LLC 218 EDINBURGH DR CARY, NC 27511-6408 |
| PROPERTY ADDRESS: | 4980 BEAVER CREEK RD NEW HILL, NC 27662 |
| TOTAL ACREAGE: | ±24.74 AC (± 1,077,674.4 SF) |
| EXISTING ZONING: | R1 (CHATHAM COUNTY) |
| WATERSHED DISTRICT: | WS-IV; B; NSW, CA |
| RECEIVING WATER COURSE: | NEW HOPE RIVER ARM OF B. EVERETT JORDAN LAKE |
| INDEX NUMBER: | 16-41-(3,5) |
| WATERSHED RIVER BASIN: | CAPE FEAR |
| CURRENT USE: | VACANT LOT |
| PROPOSED USE: | MAJOR SUBDIVISION W/ PUBLIC DRIVEWAY |

| NO. | REVISIONS | DATE |
|---------|---------------------------------------|------|
| 409/24 | | |
| 3/22/24 | | |
| 2/16/24 | | |
| C | REVISED PER COUNTY AND NCDOT COMMENTS | |
| B | REVISED PER COUNTY COMMENTS | |
| A | REVISED PER NCDOT COMMENTS | |

GENERAL NOTES

- EXISTING UNDERGROUND STRUCTURES AND UTILITIES SHOWN ARE BASED ON FIELD SURVEYS AND BEST AVAILABLE RECORD DRAWINGS. THE CONTRACTOR SHALL FIELD VERIFY CONDITIONS, INCLUDING THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES, PRIOR TO STARTING CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- THE CONTRACTOR SHALL CONTACT NORTH CAROLINA ONE CALL AT 1-800-632-4949. THE CONTRACTOR SHALL CALL AT LEAST 48 HOURS PRIOR TO ANY DIGGING.
- ALL CONSTRUCTION SHALL CONFORM TO CHATHAM COUNTY STANDARDS AND SPECIFICATIONS.
- ALL CONSTRUCTION WITHIN N.C.D.O.T. RIGHT OF WAY SHALL CONFORM TO N.C.D.O.T. STANDARDS AND SPECIFICATIONS.
- TOPOGRAPHIC INFORMATION PROVIDED BY CE GROUP, INC. RALEIGH, NC.
- PROPERTY LIES WITHIN ZONE "X" AS DEFINED BY FLOOD PANEL NUMBERS 9771 & 9780, MAP NUMBERS 371097100K & 371097800K DATED 11/17/2017.
- ALL LOTS TO UTILIZE INDIVIDUAL WELL AND SEPTIC SYSTEMS. NO UTILITIES ARE PROPOSED WITHIN THE SCOPE OF WORK FOR THIS PROJECT. ANY FUTURE UTILITIES WILL BE PERMITTED SEPARATELY.
- PLAN SET UTILIZES THE NORTH CAROLINA STATE PLAN COORDINATE SYSTEM.

OWNER/ DEVELOPER:
KC2 HOLDINGS, LLC
218 EDINBURGH DR
CARY, NC 27511-6408
PHONE: 919-802-5020
CONTACT: KYLER ZADELL

ENGINEER / SURVEYOR:
CE GROUP, INC
301 GLENWOOD AVENUE, SUITE 220
RALEIGH, NC 27603
PHONE: 919-367-8790
CONTACT: JEFF FOSTER, PE
EMAIL: JEFF@CEGROUPINC.COM

WETLAND & WATERS LOCATION:
TERRACON
2401 BRENTWOOD RD, SUITE 107
RALEIGH, NC 27604
PHONE: 919-878-2211
CONTACT: RHIANNON GRAHM
CONTACT: JEFF HARBOUR, PWS
EMAIL: TERRACON.COM

FLOOD CERTIFICATION
UPON EXAMINATION OF FLOOD INSURANCE RATE MAPS, PANEL NUMBER 0700 (CHATHAM COUNTY), BEARING MAP # 3720070000L, DATED 7/19/2022, THE SUBJECT PROPERTY LIES IN ZONE "X", WHICH IS AN AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE AND FUTURE CONDITIONS 1% ANNUAL CHANCE FLOODPLAIN.

GENERAL CONSTRUCTION NOTES

- ALL WORK AND MATERIALS SHALL CONFORM TO CHATHAM COUNTY STANDARDS AND APPLICABLE NORTH CAROLINA BUILDING CODE AND ASSIGNS.
- CONTRACTOR SHALL VERIFY SCOPE OF WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A LOCATOR SERVICE TO IDENTIFY ALL UNDERGROUND SERVICES (POWER, TELEPHONE, COMMUNICATION, WATER, SEWER, STEAM, GAS, ETC.) NOT LOCATED BY THE NC 811. CONTRACTOR SHALL FIELD INSPECT AND VERIFY ALL SERVICES PRIOR TO CONSTRUCTION. EXISTING SERVICES SHALL NOT BE ABANDONED, INTERRUPTED, OR REMOVED UNLESS CALLED FOR ON APPROVED CONSTRUCTION DRAWINGS. TIMING OF ABANDONMENT MUST BE SUCH THAT EXISTING FACILITIES REMAIN OPERABLE. ALL TEMPORARY DISRUPTION OF SERVICE (OFF HOUR, SHORT TERM, ETC.) TO EXISTING FACILITIES SHALL BE COORDINATED WITH OWNER. ANY DISCREPANCIES WITH THE APPROVED SET OF PLANS FOUND IN THE FIELD SHALL BE CALLED TO THE ATTENTION OF THE ENGINEER AND ARCHITECT AND SHALL WAIT FOR CLARIFICATION BY ARCHITECT/ENGINEER PRIOR TO PROCEEDING WITH THE COORDINATION WITH OWNER CONSTRUCTION.
- THE CONTRACTOR SHALL CONTACT NORTH CAROLINA ONE CALL AT 1-800-632-4949. THE CONTRACTOR SHALL CALL AT LEAST 48 HOURS PRIOR TO ANY DIGGING.
- PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THAT ALL PERMITS AND APPROVALS HAVE BEEN OBTAINED FROM ALL REGULATORY AUTHORITIES AND SHALL BE THOROUGHLY FAMILIAR WITH CONDITIONS OF SAID PERMITS AND INSPECTION REQUIREMENTS.
- CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO ANY EXISTING ITEM AND OR MATERIAL INSIDE OR OUTSIDE CONSTRUCTION LIMITS. CONTRACTOR TO COORDINATE LOCATION AND GATED ACCESS POINTS THROUGH TEMPORARY CONSTRUCTION FENCE ALONG WITH SEQUENCE OF INSTALLATION WITH OWNER.
- CONTRACTOR SHALL MAINTAIN SITE IN A MANNER THAT WORKMAN AND PUBLIC ARE SAFE FROM INJURY. CONTRACTOR IS SOLELY RESPONSIBLE FOR ENFORCING ALL APPLICABLE SAFETY REGULATIONS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR INSURING CONSTRUCTION ACTIVITY IS IN ACCORDANCE WITH APPLICABLE OSHA REGULATIONS.
- CE GROUP IS NOT IN CONTROL, IN CHARGE OF, OR RESPONSIBLE FOR ACTUAL CONSTRUCTION MEANS, METHODS, OR TECHNIQUES, PROCEDURES, OR SAFETY PRECAUTIONS IN CONNECTION WITH THE WORK OR FOR THE ACTS OR OMISSIONS OF CONTRACTORS OR ANY OTHER INDIVIDUALS NOT UNDER THE DIRECT EMPLOYMENT OF CE GROUP.
- CONTRACTOR SHALL RESTORE DISTURBED AREAS TO EXISTING CONDITION OR BETTER.
- ALL GROUND SLOPES SHALL BE GRADED NO STEEPER THAN 3:1
- CONTRACTOR SHALL FURNISH ARCHITECT/ENGINEER WITH AN AS-BUILT SURVEY OF ALL NEW AND RELOCATED UTILITY AND DRAINAGE IMPROVEMENTS UPON COMPLETION OF CONSTRUCTION.
- ALL CONSTRUCTION WITHIN N.C.D.O.T. RIGHT OF WAY SHALL CONFORM TO N.C.D.O.T. STANDARDS AND SPECIFICATIONS.
- PLAN SET UTILIZES THE NORTH CAROLINA STATE PLANE COORDINATE SYSTEM.



VICINITY MAP
1" = 2000'



INDEX TO DRAWINGS

| | |
|-------------------------------|------------------------|
| COVER | C000 |
| EXISTING CONDITIONS | C101 |
| OVERALL SITE PLAN | C201 |
| ROAD SITE P&P | C202 |
| EC PLANS - STAGE 1 | C804 |
| EC PLANS - STAGE 2 | C802 |
| GRADING & DRAINAGE | C401 |
| SOM #01 | C704 |
| DRAINAGE AREA MAPS | C803 - C802 |
| EC DETAILS | C331 - C333 |
| EC SPECIFICATIONS | C334 |
| EC MATERIALS | C335 |
| NCDOT and STORM | C451 |

STORMWATER MANAGEMENT CERTIFICATION

I **Jeff Foster** certify that the stormwater management facilities and practices will control and treat the runoff from the 1 year 1-hour storm event for the total drainage area of the structure, that the designs and plans are sufficient to comply with the applicable standards and policies found in the NC DEQ Stormwater BMP Design Manual, and that the designs and plans ensure compliance with the County's Stormwater Ordinance.

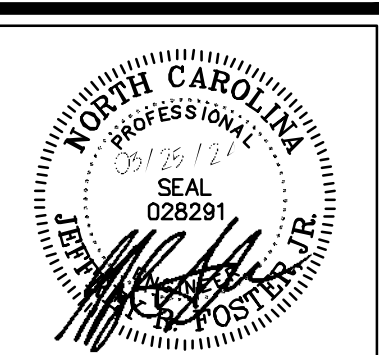


CE GROUP

301 GLENWOOD AVE. 220
RALEIGH, NC 27603
PHONE: 919-367-8790
FAX: 919-322-0032

www.cegroupinc.com

License # C-1739

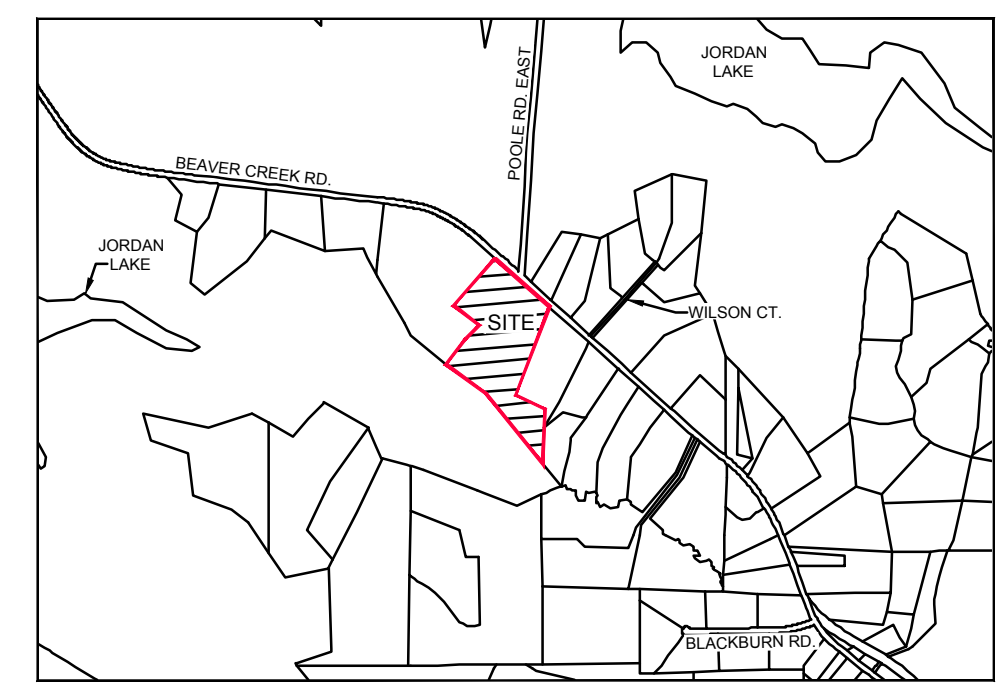


CONSTRUCTION PLANS
ANFIELD ESTATES
COVER
CHATHAM COUNTY, NORTH CAROLINA

| | |
|---------------------|-------------------|
| Date: | JANUARY 26 , 2024 |
| Scale: | N/A |
| Drawn: | HKJ |
| Checked: | JRF |
| Project No.: | 148-005 |
| Computer Dwg. Name: | 148-005_cover |

Sheet No.:

C000
Of 20



SOIL TABLE

| SOIL NAME | HYDROLOGIC GROUP | RUNOFF CLASS | AREA |
|-----------|------------------|--------------|----------|
| CrC | D | HIGH | 11.14 AC |
| WhB | D | VERY HIGH | 2.3 AC |
| CrB | D | MEDIUM | 11.33 AC |

CONSTRUCTION NOTES

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH STATE AND LOCAL REQUIREMENTS.

SUFFICIENT EROSION CONTROL PRACTICES MUST BE INSTALLED AND MAINTAINED TO RETAIN SEDIMENT WITHIN THE BOUNDARIES OF THE SITE. GROUND COVER STABILIZATION SHALL BE IN ACCORDANCE WITH NPDES PERMIT AND STABILIZATION CHART ABOVE. TEMPORARY GROUND COVER WILL BE INSTALLED ON ALL EXPOSED SLOPES IN 7 OR 14 DAYS. PERMANENT GROUND COVER WILL BE INSTALLED ON EXPOSED SLOPES WITHIN 15 WORKING DAYS FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.

MAINTENANCE: ALL EROSION AND SEDIMENT CONTROL PRACTICES TO BE INSPECTED WEEKLY AND AFTER EVERY RUNOFF PRODUCING RAINFALL EVENT. NEEDED REPAIRS WILL BE MADE IMMEDIATELY.

NO DISTURBANCE TO TAKE PLACE INSIDE STREAM BUFFERS OR WETLANDS UNTIL ALL REQUIRED ACOE, 404 PERMITS, NCDENR 401 PERMITS, AND / OR CHATHAM BUFFER IMPACT AUTHORIZATION HAVE BEEN OBTAINED AND COPY OF PERMITS ON-SITE.

MAXIMUM GRADED SLOPE SHALL NOT EXCEED TWO (2) TO ONE (1).

TOTAL DISTURBED AREA= 3.27 ACRES

GROUND STABILIZATION *

| SITE AREA DESCRIPTION | STABILIZATION TIME FRAME | STABILIZATION TIME FRAME EXCEPTIONS |
|--|--------------------------|---|
| Perimeter dikes, swales, ditches and slopes | 7 days | None |
| High Quality Water (HQW) Zones | 7 days | None |
| Slopes steeper than 3:1 | 7 days | If slopes are 10' or less in length and are not steeper than 2:1, 14 days allowed |
| Slopes 3:1 or flatter | 14 days | 7-days for slopes greater than 50-feet in length |
| All other areas with slopes flatter than 4:1 | 14 days | None (except for perimeters and HQW Zones) |

*Extensions of time may be approved by the permitting authority based on weather or other site-specific conditions that make compliance impracticable. (Section II.B (2)(b))

NCDENR SELF-INSPECTION PROGRAM

THE SEDIMENTATION POLLUTION CONTROL ACT WAS AMENDED IN 2006 TO REQUIRE THAT PERSONS RESPONSIBLE FOR LAND-DISTURBING ACTIVITIES INSPECT A PROJECT AFTER EACH PHASE OF THE PROJECT TO MAKE SURE THAT THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN IS BEING FOLLOWED.

RULES DETAILING THE DOCUMENTATION OF THESE INSPECTIONS TAKE EFFECT OCTOBER 1, 2010.

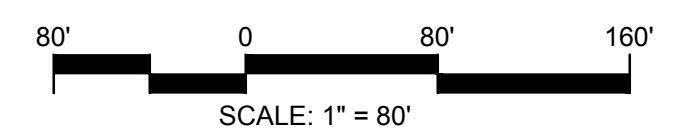
THE SELF-INSPECTION PROGRAM IS SEPARATE FROM THE WEEKLY SELF-MONITORING PROGRAM OF THE NPDES STORMWATER PERMIT FOR CONSTRUCTION ACTIVITIES. THE FOCUS OF THE SELF-INSPECTION REPORT IS THE INSTALLATION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROL MEASURES ACCORDING TO THE APPROVED PLAN. THE INSPECTIONS SHOULD BE CONDUCTED AFTER EACH PHASE OF THE PROJECT, AND CONTINUED UNTIL PERMANENT GROUND COVER IS ESTABLISHED.

THE SELF-INSPECTION REPORT FORM IS AVAILABLE AS AN EXCEL SPREADSHEET FROM THE LAND QUALITY WEB SITE.

<http://portal.ncdenr.org/web/ir/erosion>

EXISTING CONDITIONS LEGEND

- PROPERTY LINE (PL)
- - - PL NOT SURVEYED
- 275- CONTOUR MAJOR
- 274- CONTOUR MINOR
- R/W RIGHT-OF-WAY LINE
- SOILS
- EXISTING TREE LINE
- EPHEMERAL STREAM
- INTERMITTENT STREAM
- EXISTING WETLAND
- EXISTING BUFFER



| NO. | REVISIONS | DATE |
|-----|-----------|------|
| | | |
| | | |
| | | |
| | | |
| | | |

CE GROUP

301 GLENWOOD AVE. 220
RALEIGH, NC 27603
PHONE: 919-367-8790
FAX: 919-322-0032

www.cegroupinc.com

License # C-1739



CONSTRUCTION PLANS
ANFIELD ESTATES
EXISTING CONDITIONS
CHATHAM COUNTY, NORTH CAROLINA

Date: JANUARY 26, 2024

Scale: 1" = 80'

Drawn: HKJ

Checked: JRF

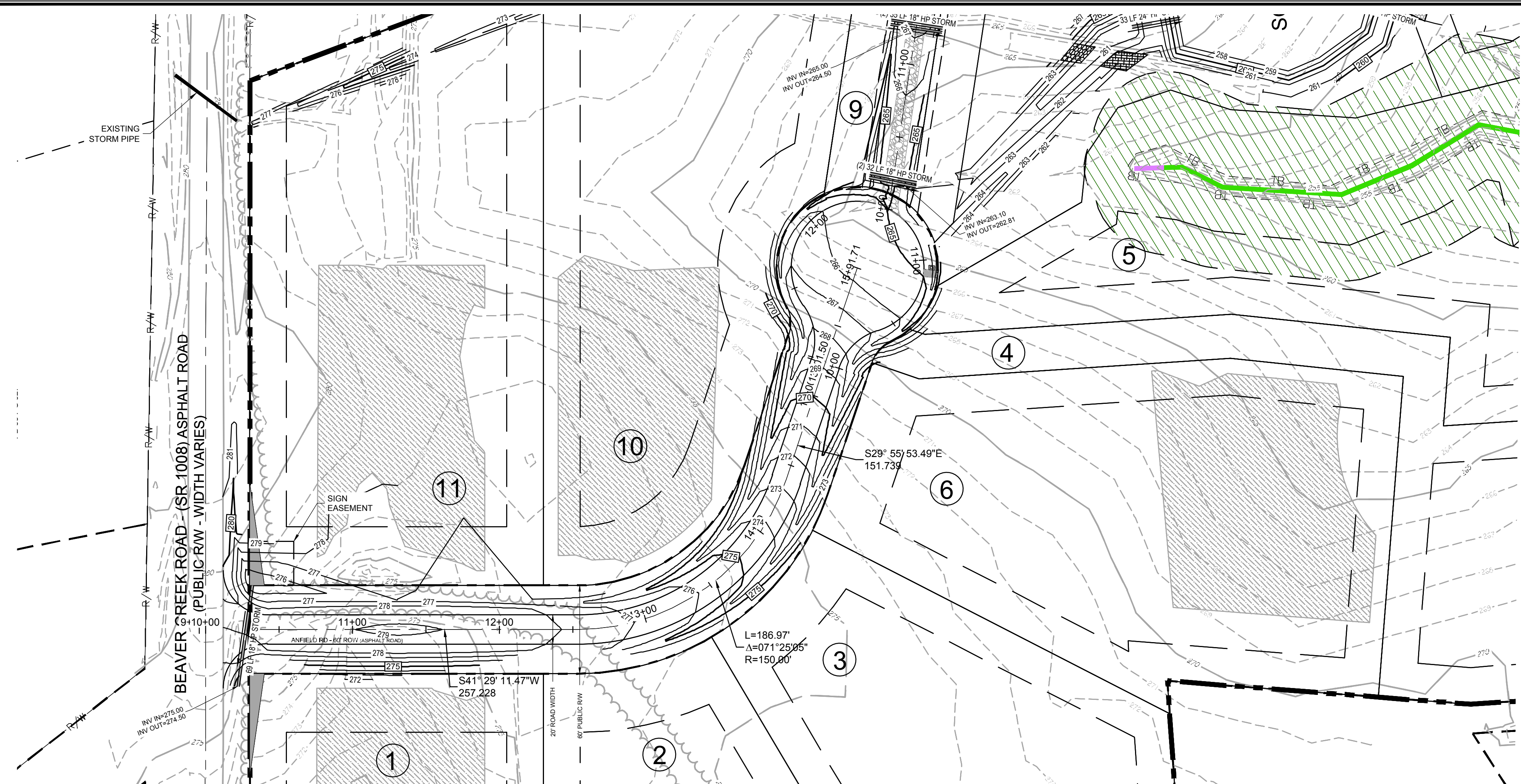
Project No: 148-005

Computer Dwg. Name: 148-005_existing conditions

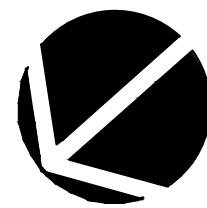
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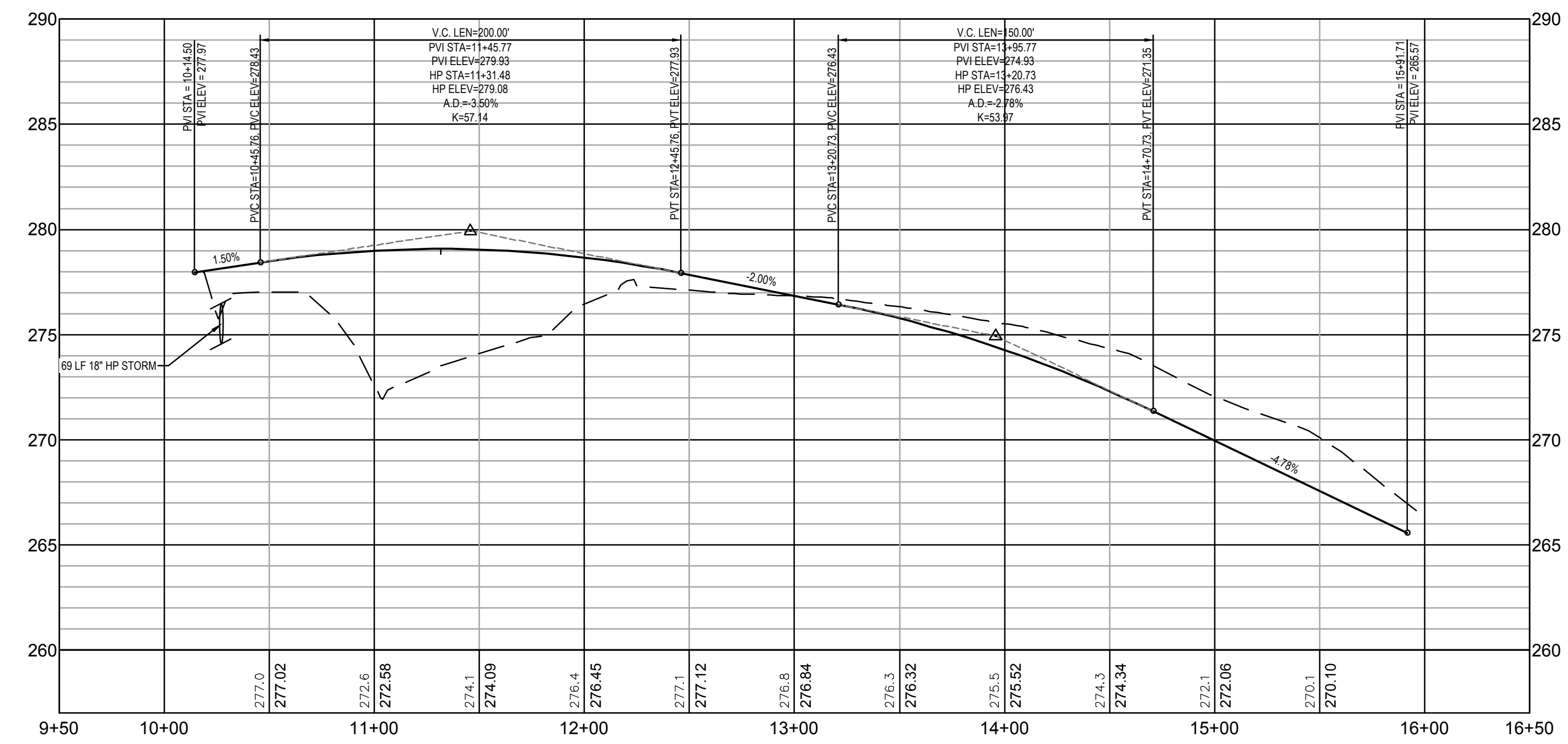
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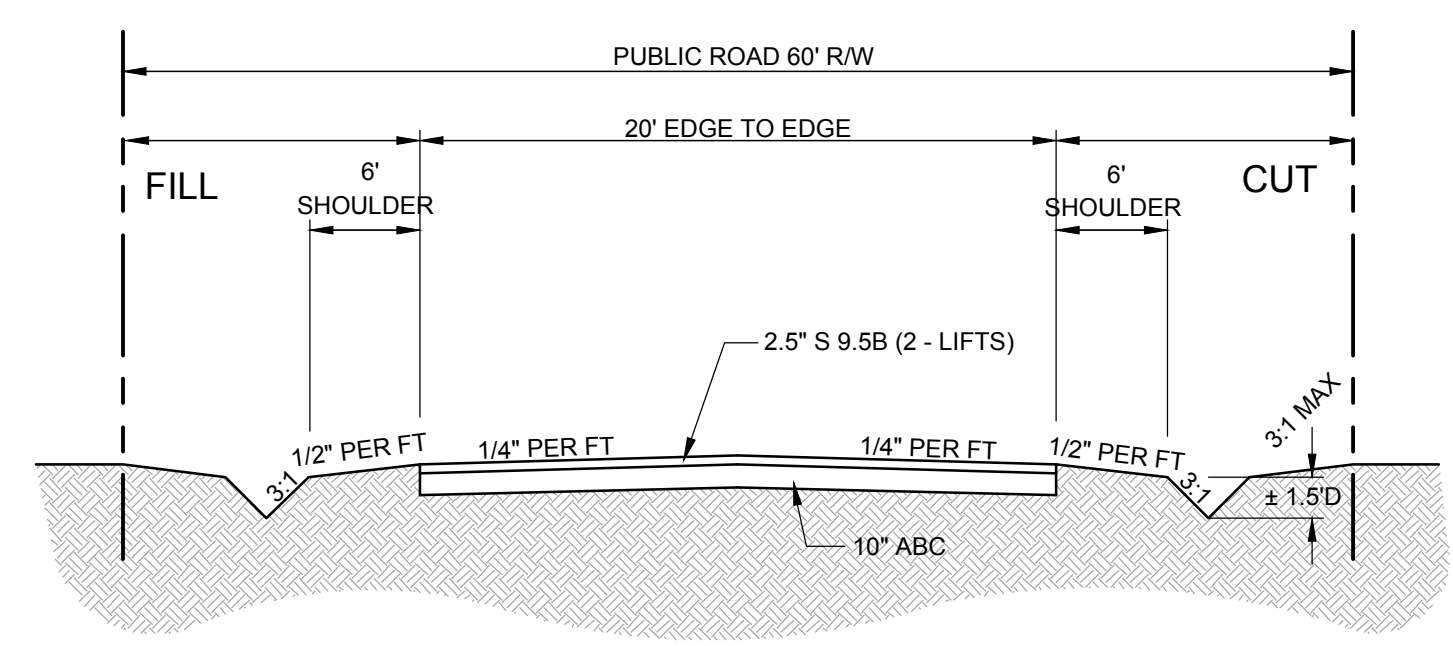


ANFIELD ROAD
 STA. 10+00 - STA 15+91.71
 H: 1"=50', V: 1"=5'


 NORTH

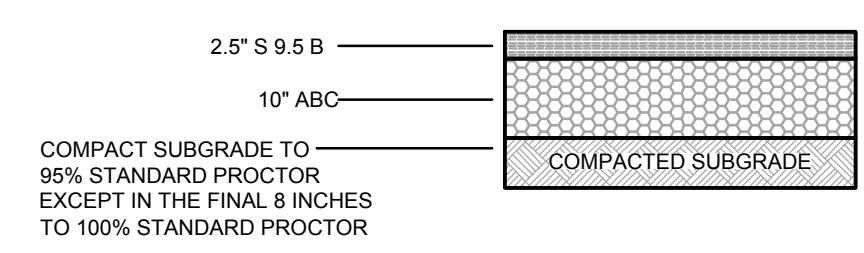


AL - ANFIELD RD
 PV - (1)
 H: 1" = 50'
 V: 1" = 5'



TYPICAL 20' PUBLIC ASPHALT DRIVE SECTION
 NOT TO SCALE

INSTALL THE 2.5\"/>



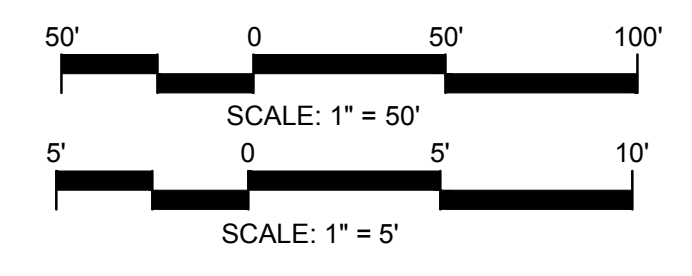
TYPICAL PAVEMENT SECTION
 NOT TO SCALE

GENERAL NOTES

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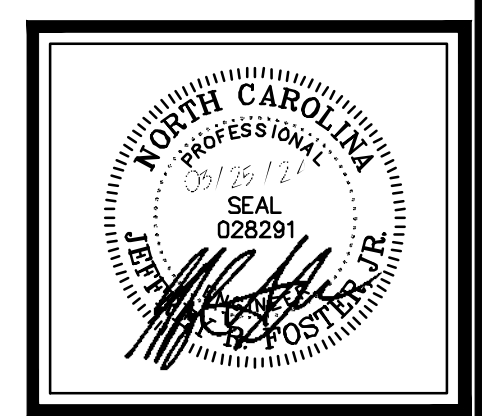
PROPOSED LINE & SYMBOL LEGEND

- PROPERTY / PROJECT LINE (PL)
- EASEMENT ACCESS
- STORMWATER EASEMENT ACCESS
- PROPOSED CONTOUR MAJOR
- PROPOSED CONTOUR MINOR
- EXISTING CONTOUR MAJOR
- EXISTING CONTOUR MINOR
- LOT LINE
- PROPOSED SETBACK
- DRIVEWAY EASEMENT
- EXISTING TREE LINE
- PROPOSED TREE LINE
- PROPOSED HOUSE
- PROPOSED SEPTIC AREA
- PROPOSED POND



| NO. | REVISIONS | DATE |
|-----|-----------------------------|---------|
| 1 | REVISED PER COUNTY COMMENTS | 4/09/24 |
| 2 | REVISED PER COUNTY COMMENTS | 3/22/24 |
| 3 | REVISED PER COUNTY COMMENTS | 2/16/24 |

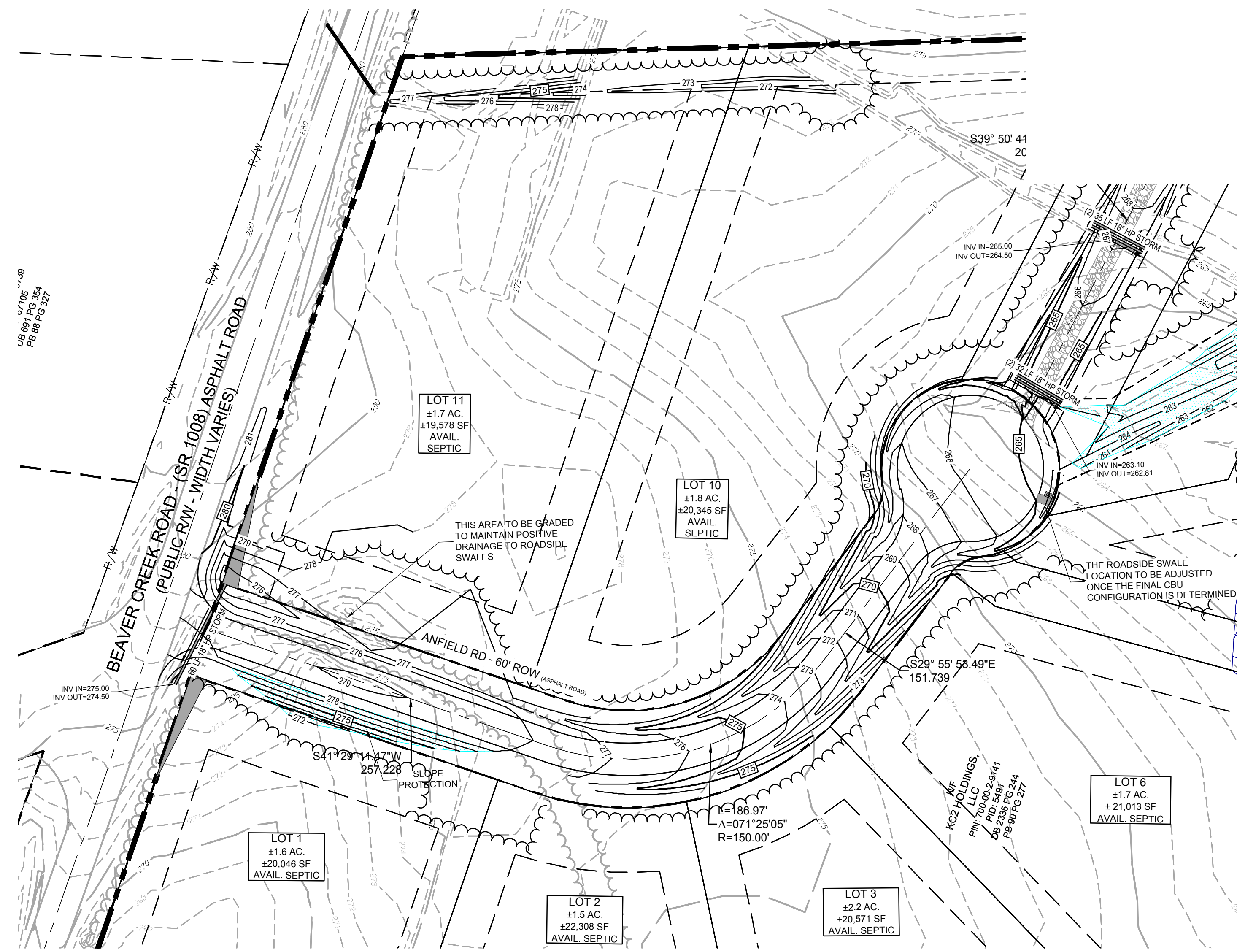

CE GROUP
 301 GLENWOOD AVE. 220
 RALEIGH, NC 27603
 PHONE: 919-367-8790
 FAX: 919-322-0032
 www.cegroupinc.com
 License # C-1739



CONSTRUCTION PLANS
ANFIELD ESTATES
ANFIELD ROAD
STA. 10+00 - 15+91.71
CHATHAM COUNTY, NORTH CAROLINA

Date: JANUARY 26, 2024
 Scale: H: 1"=50', V: 1"=5'
 Drawn: HKJ
 Checked: JRF
 Project No: 148-005
 Computer Dwg. Name: 148-005_road site pfp

Sheet No:
C202
 Of 22



PLAN - ANFIELD ROAD
SCALE: 1"=50'



PLAN - PRIVATE SHARED DRIVE
SCALE: 1"=50'

GENERAL NOTES

- EXISTING UNDERGROUND STRUCTURES AND UTILITIES SHOWN ARE BASED ON FIELD SURVEYS AND BEST AVAILABLE RECORD DRAWINGS. THE CONTRACTOR SHALL FIELD VERIFY CONDITIONS, INCLUDING THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES, PRIOR TO STARTING CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- THE CONTRACTOR SHALL CONTACT NORTH CAROLINA ONE CALL AT 1-800-432-4949. THE CONTRACTOR SHALL CALL AT LEAST 48 HOURS PRIOR TO ANY DIGGING.
- ALL CONSTRUCTION SHALL CONFORM TO CHATHAM COUNTY STANDARDS AND SPECIFICATIONS.
- ALL CONSTRUCTION WITHIN N.C.D.O.T. RIGHT OF WAY SHALL CONFORM TO N.C.D.O.T. STANDARDS AND SPECIFICATIONS.
- TOPOGRAPHIC INFORMATION PROVIDED BY CE GROUP, INC. RALEIGH, NC.
- PROPERTY LIES WITHIN ZONE "X" AS DEFINED BY FLOOD PANEL NUMBERS 9771 & 9780, MAP NUMBERS 3710977100K & 371097800K DATED 11/17/2017.
- ALL LOTS TO UTILIZE INDIVIDUAL WELL AND SEPTIC SYSTEMS. NO UTILITIES ARE PROPOSED WITHIN THE SCOPE OF WORK FOR THIS PROJECT. ANY FUTURE UTILITIES WILL BE PERMITTED SEPARATELY.
- PLAN SET UTILIZES THE NORTH CAROLINA STATE PLAN COORDINATE SYSTEM.

PROJECT SPECIFIC NOTES

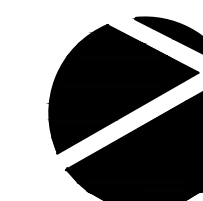
- EXISTING UNDERGROUND STRUCTURES AND UTILITIES SHOWN ARE BASED ON FIELD SURVEYS AND BEST AVAILABLE RECORD DRAWINGS. THE CONTRACTOR SHALL FIELD VERIFY CONDITIONS, INCLUDING THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES, PRIOR TO STARTING CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- TOPOGRAPHIC INFORMATION PROVIDED BY CE GROUP, INC. RALEIGH, NC. PROFILE DATA FROM FIELD SURVEY AND BACKGROUND TOPOGRAPHY FROM AERIAL MAPPING.
- DISTURBANCE IS LIMITED TO NO MORE THAN 15 AC OF GRADUAL SLOPED LAND AT ANY ONE TIME (0 - 14.9% SLOPE).
- DISTURBANCE IS LIMITED TO NO MORE THAN 10 AC OF MODERATELY SLOPED LAND AT ANY ONE TIME (15 - 24.9% SLOPE).

GRADING & DRAINAGE LINE & SYMBOL LEGEND

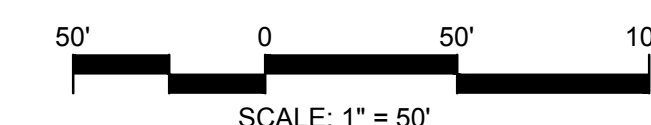
| | |
|-----|------------------------------|
| --- | PROPERTY / PROJECT LINE (PL) |
| --- | EASEMENT ACCESS |
| --- | PROPOSED CONTOUR MAJOR |
| --- | PROPOSED CONTOUR MINOR |
| --- | EXISTING CONTOUR MAJOR |
| --- | EXISTING CONTOUR MINOR |
| --- | LOT LINE |
| --- | PROPOSED SETBACK |
| --- | DRIVEWAY EASEMENT |
| --- | EXISTING TREE LINE |
| --- | PROPOSED TREE LINE |
| --- | SLOPE PROTECTION |
| --- | GRAVEL DRIVEWAY |

NCDOT NOTES:

- NCDOT DOES NOT ACCEPT MAINTENANCE RESPONSIBILITY FOR THE DRAINAGE STRUCTURES AND PIPING OUTSIDE THE NCDOT RIGHT OF WAY.
- NCDOT ASSUMES NO RESPONSIBILITY FOR OPERATION, MAINTENANCE OR LIABILITY OF THE STRUCTURE STORMWATER BMP'S.



NORTH



SCALE: 1" = 50'



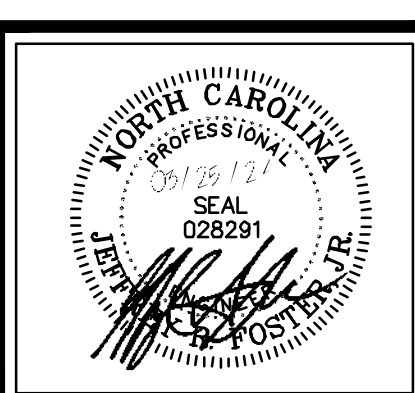
| NO. | REVISIONS | DATE |
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CONSTRUCTION PLANS
ANFIELD ESTATES
GRADING & DRAINAGE

CHATHAM COUNTY, NORTH CAROLINA

| | |
|---------------------|------------------------------|
| Date: | JANUARY 26, 2024 |
| Scale: | 1" = 50' |
| Drawn: | HKJ |
| Checked: | JRF |
| Project No.: | 148-005 |
| Computer Dwg. Name: | 148-005_grading and drainage |

Sheet No:

C401
Of 22

HP STORM TRENCH INSTALLATION DETAIL

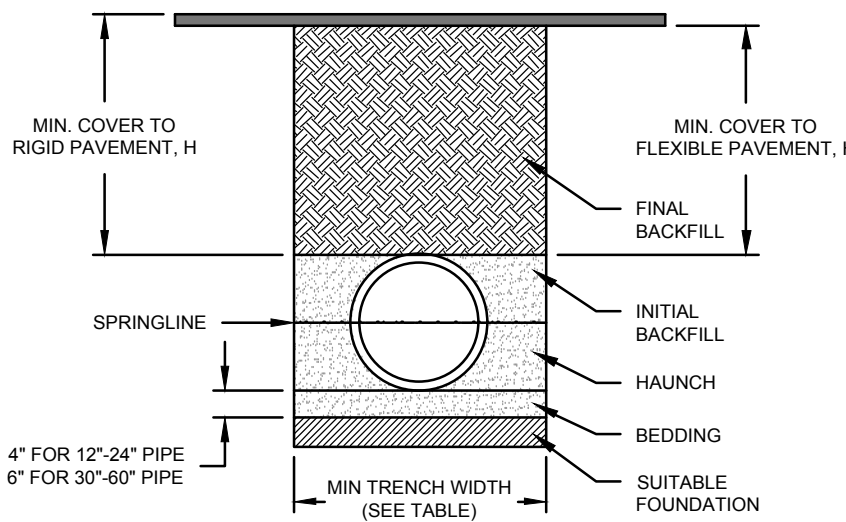


TABLE 1. RECOMMENDED MINIMUM TRENCH WIDTHS

| PIPE DIA. | MIN. TRENCH WIDTH |
|--------------|-------------------|
| 12" (300mm) | 18" (450mm) |
| 15" (375mm) | 21" (525mm) |
| 18" (450mm) | 24" (600mm) |
| 24" (600mm) | 30" (750mm) |
| 30" (750mm) | 36" (900mm) |
| 36" (900mm) | 42" (1050mm) |
| 42" (1050mm) | 48" (1200mm) |
| 48" (1200mm) | 54" (1350mm) |
| 60" (1500mm) | 66" (1650mm) |

TABLE 2. MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS

| PIPE DIA. | SURFACE LIVE LOADING CONDITION | |
|----------------------------|--------------------------------|------------------------------------|
| | H-25 | HEAVY CONSTRUCTION (75T AXLE LOAD) |
| 12" - 48" (300mm - 1200mm) | 12" (300mm) | 48" (1219mm) |
| 60" (1500mm) | 34" (863mm) | 60" (1524mm) |

TABLE 3. MAXIMUM COVER FOR ADS HP STORM PIPE II

| PIPE DIA. | CLASS I | | | | CLASS II | | | | CLASS III | | | | CLASS IV | | | |
|-----------|---------|-----|-----|-----|----------|-----|-----|-----|-----------|-----|-----|-----|----------|-----|-----|-----|
| | 95% | 90% | 85% | 80% | 95% | 90% | 85% | 80% | 95% | 90% | 85% | 80% | 95% | 90% | 85% | 80% |
| 12" | 41 | 28 | 21 | 16 | 20 | 16 | 16 | 16 | 20 | 16 | 16 | 16 | 20 | 16 | 16 | 16 |
| 15" | 42 | 29 | 21 | 16 | 21 | 16 | 16 | 16 | 21 | 16 | 16 | 16 | 21 | 16 | 16 | 16 |
| 18" | 44 | 30 | 21 | 16 | 22 | 17 | 16 | 16 | 22 | 17 | 16 | 16 | 22 | 17 | 16 | 16 |
| 24" | 50 | 30 | 21 | 15 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 |
| 30" | 39 | 27 | 19 | 14 | 19 | 15 | 14 | 14 | 19 | 15 | 14 | 14 | 19 | 15 | 14 | 14 |
| 36" | 28 | 20 | 14 | 9 | 14 | 10 | 9 | 9 | 14 | 10 | 9 | 9 | 14 | 10 | 9 | 9 |
| 42" | 20 | 14 | 9 | 9 | 14 | 10 | 9 | 9 | 14 | 10 | 9 | 9 | 14 | 10 | 9 | 9 |
| 48" | 20 | 14 | 9 | 9 | 14 | 10 | 9 | 9 | 14 | 10 | 9 | 9 | 14 | 10 | 9 | 9 |
| 60" | 20 | 14 | 9 | 9 | 14 | 10 | 9 | 9 | 14 | 10 | 9 | 9 | 14 | 10 | 9 | 9 |

- NOTES:**
- ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321 "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS". LATEST EDITION, WITH THE EXCEPTION THAT THE INITIAL BACKFILL MAY EXTEND TO THE CROWN OF THE PIPE. SOIL CLASSIFICATIONS ARE PER THE LATEST VERSION OF ASTM D2321. CLASS IV MATERIALS (MH, CH) AS DEFINED IN PREVIOUS VERSIONS OF ASTM D2321 ARE NOT APPROPRIATE BACKFILL MATERIALS.
 - MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE PINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
 - FOUNDATION:** WHERE THE TRENCH BOTTOM IS UNSUITABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER, AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
 - BEDDING:** SUITABLE MATERIAL SHALL BE CLASS II, III, OR IV. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. COMPACTION SHALL BE SPECIFIED BY THE ENGINEER IN ACCORDANCE WITH TABLE 3 FOR THE APPLICABLE FILL HEIGHTS LISTED. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 12" - 24" (300mm - 600mm) DIAMETER PIPE, 6" (150mm) FOR 30" - 48" (750mm - 1200mm) DIAMETER PIPE. THE MIDDLE 1/3 BENEATH THE PIPE INVERT SHALL BE LOOSELY PLACED. PLEASE NOTE, CLASS IV MATERIAL HAS LIMITED APPLICATION AND CAN BE DIFFICULT TO PLACE AND COMPACT. USE ONLY WITH THE APPROVAL OF A SOIL EXPERT.
 - INITIAL BACKFILL:** SUITABLE MATERIAL SHALL BE CLASS II, III, OR IV IN THE PIPE ZONE EXTENDING TO THE CROWN OF THE PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION. COMPACTION SHALL BE SPECIFIED BY THE ENGINEER IN ACCORDANCE WITH TABLE 3 FOR THE APPLICABLE FILL HEIGHTS LISTED. PLEASE NOTE, CLASS IV MATERIAL HAS LIMITED APPLICATION AND CAN BE DIFFICULT TO PLACE AND COMPACT. USE ONLY WITH THE APPROVAL OF A SOIL EXPERT.
 - MINIMUM COVER:** MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" (300mm) FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOTATION. FOR TRAFFIC APPLICATIONS, CLASS I OR II MATERIAL COMPACTED TO 90% SPD AND CLASS III COMPACTED TO 90% SPD IS REQUIRED. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" (300mm) UP TO 48" (1200mm) DIAMETER PIPE AND 24" (600mm) OF COVER FOR 60" (1500mm) DIAMETER PIPE. MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.
 - FOR ADDITIONAL INFORMATION SEE TECHNICAL NOTE 2.04.

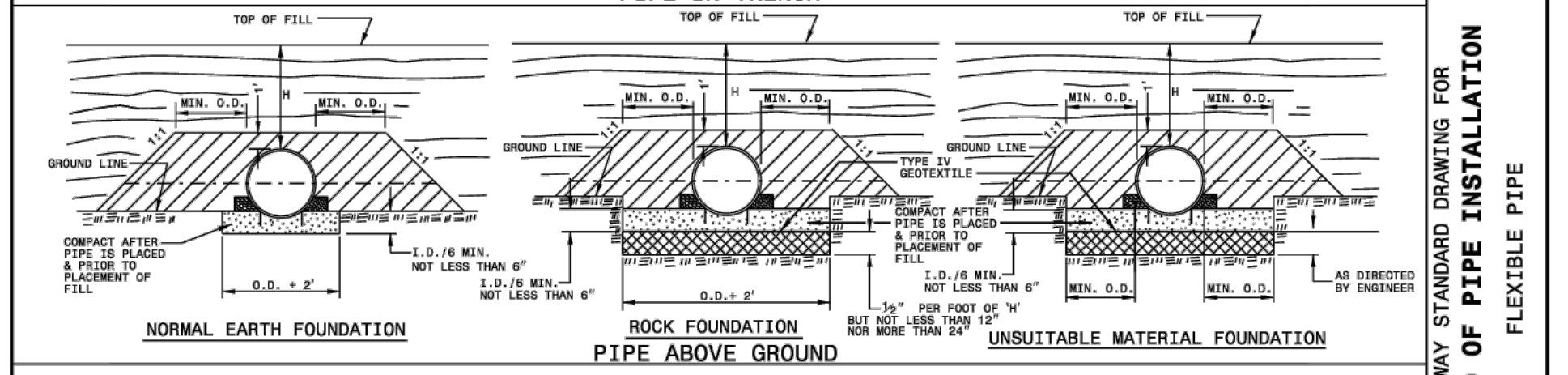
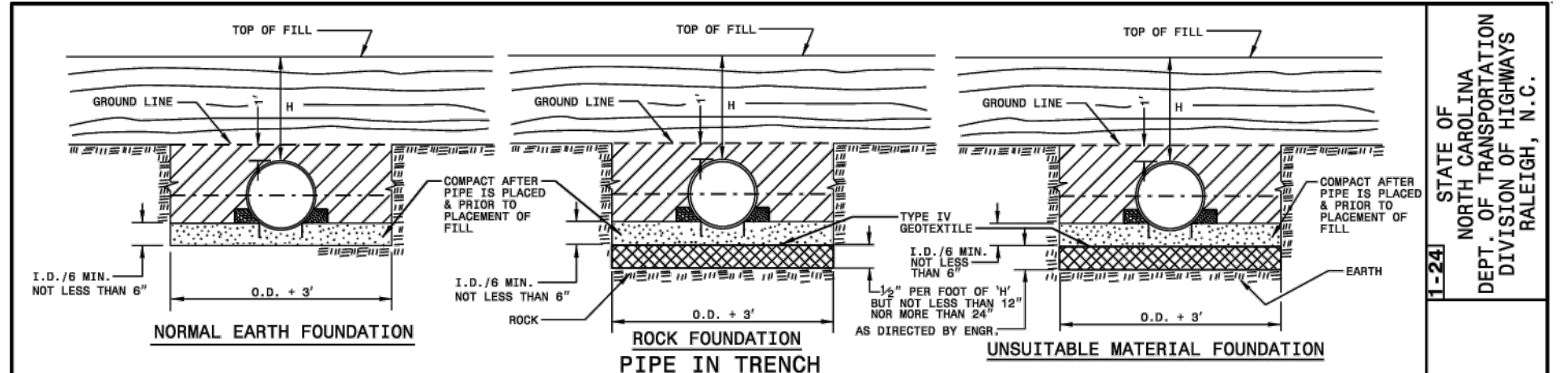
FILL HEIGHT TABLE GENERATED USING AASHTO SECTION 12. LOAD RESISTANCE FACTOR DESIGN (LRFD) PROCEDURE WITH THE FOLLOWING ASSUMPTIONS:
NO HYDROSTATIC PRESSURE
UNIT WEIGHT OF SOIL (γ_{soil}) = 120 PCF

| REV. | DESCRIPTION | BY | DATE | CHKD. |
|------|---------------------------------------|-----|----------|-------|
| 1 | TRENCH INSTALLATION DETAIL (HP STORM) | JAS | 01/20/09 | JAS |

ADVANCED DRAINAGE SYSTEMS, INC. (ADS) HAS PREPARED THIS DETAIL BASED ON INFORMATION PROVIDED TO ADS. THIS DRAWING IS INTENDED TO BE USED AS A GENERAL REFERENCE ONLY. ADS HAS NOT PERFORMED ANY ENGINEERING OR DESIGN SERVICES FOR THIS PROJECT NOR HAS ADS INDEPENDENTLY VERIFIED THE INFORMATION SUPPLIED. THE INSTALLATION DETAILS PROVIDED HEREIN ARE GENERAL RECOMMENDATIONS AND ARE NOT SPECIFIC FOR THIS PROJECT. THE DESIGN ENGINEER SHALL REVIEW THESE DETAILS PRIOR TO CONSTRUCTION. IF THE DESIGN ENGINEER RESPONSIBILITY TO ENSURE THE DETAILS PROVIDED HEREIN MEETS OR EXCEEDS THE APPLICABLE NATIONAL, STATE, OR LOCAL REQUIREMENTS AND TO ENSURE THAT THE DETAILS PROVIDED HEREIN ARE ACCEPTABLE FOR THIS PROJECT.



DRAWING NUMBER: STD-1-01-D



GENERAL NOTES:

- I.O. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.
- D.O. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.
- H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP OF THE EMBANKMENT AT THAT POINT.

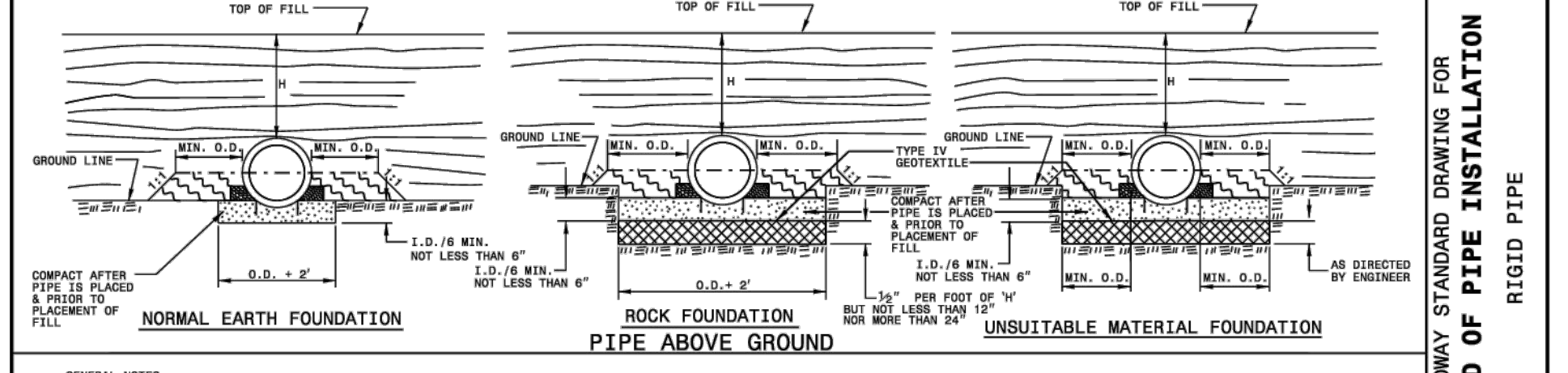
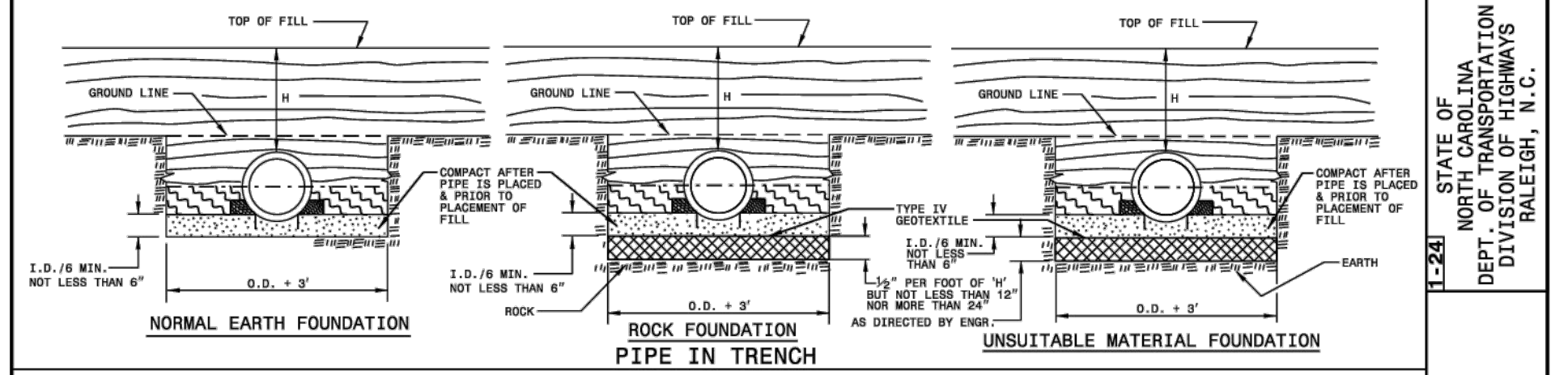
DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL. REFER TO MCDOT PIPE MATERIAL SELECTION GUIDE AND STANDARD SPECIFICATIONS FOR ALLOWABLE PIPE FILL HEIGHTS AND PIPE SPECIFICATIONS.

SPRINGLINE OF PIPE
SELECT BACKFILL MATERIAL CLASS III OR CLASS II, TYPE I ABOVE AND BELOW SPRINGLINE.
UNDISTURBED EARTH MATERIAL
SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH TYPE IV GEOTEXTILE AS DIRECTED BY THE ENGINEER.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR METHOD OF PIPE INSTALLATION FLEXIBLE PIPE

SHEET 1 OF 2
300.01



GENERAL NOTES:

- I.O. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.
- D.O. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.
- H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP OF THE EMBANKMENT AT THAT POINT.

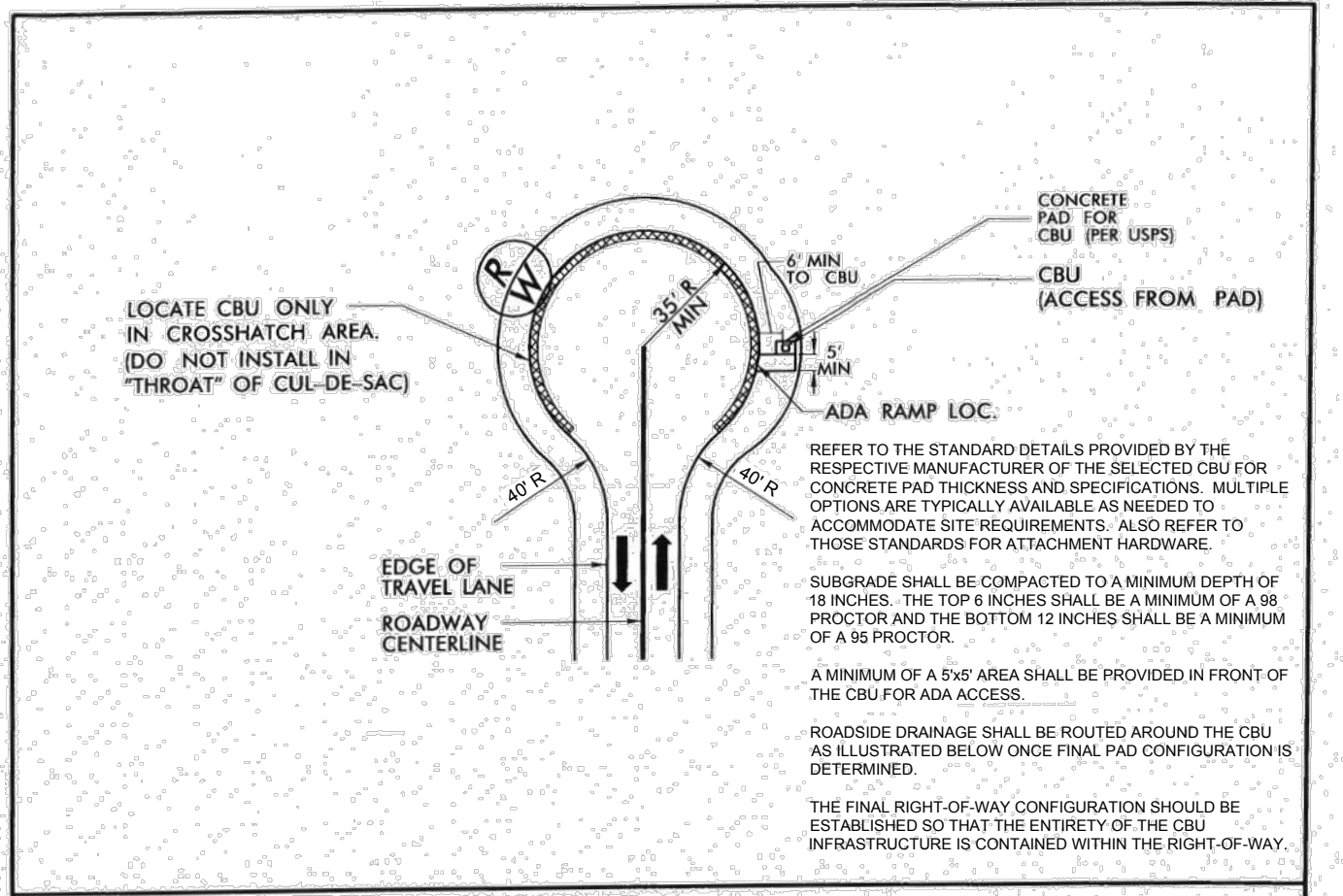
DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL. REFER TO MCDOT PIPE MATERIAL SELECTION GUIDE AND STANDARD SPECIFICATIONS FOR ALLOWABLE PIPE FILL HEIGHTS AND PIPE SPECIFICATIONS.

SPRINGLINE OF PIPE
SELECT BACKFILL MATERIAL CLASS III OR CLASS II, BELOW SPRINGLINE.
UNDISTURBED EARTH MATERIAL
SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH TYPE IV GEOTEXTILE AS DIRECTED BY THE ENGINEER.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR METHOD OF PIPE INSTALLATION RIGID PIPE

SHEET 2 OF 2
300.01



SEE FIGURE 8 PAGE 46 "MCDOT SUBDIVISION ROADS MINIMUM CONSTRUCTION STANDARDS JANUARY 2007" FOR LOCAL AND COLLECTOR ROAD DIMENSIONS.

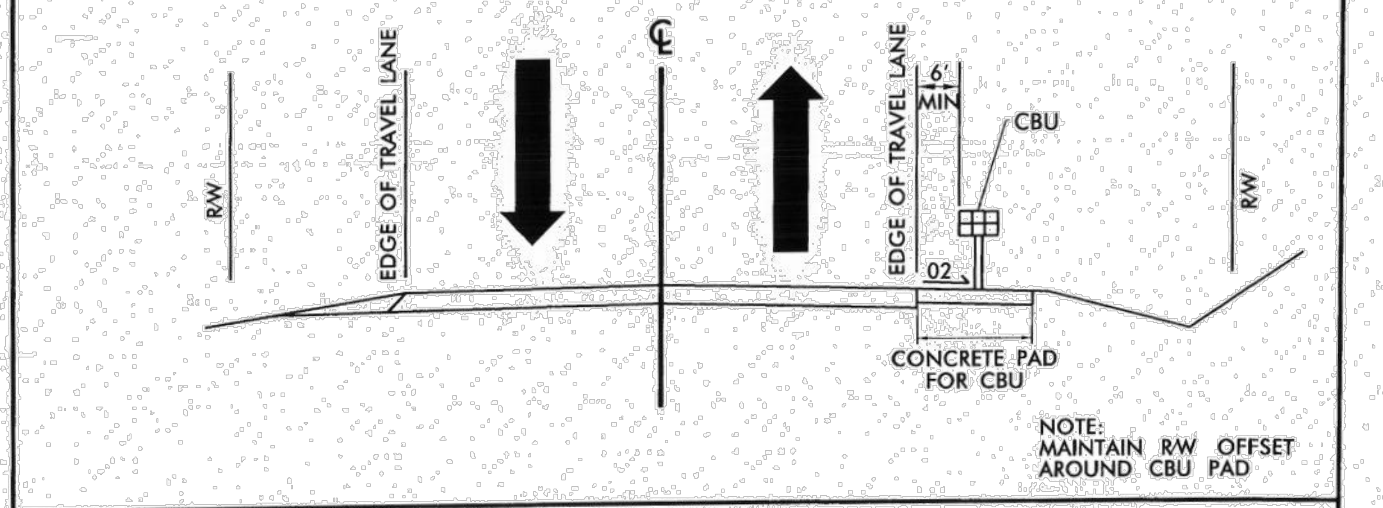
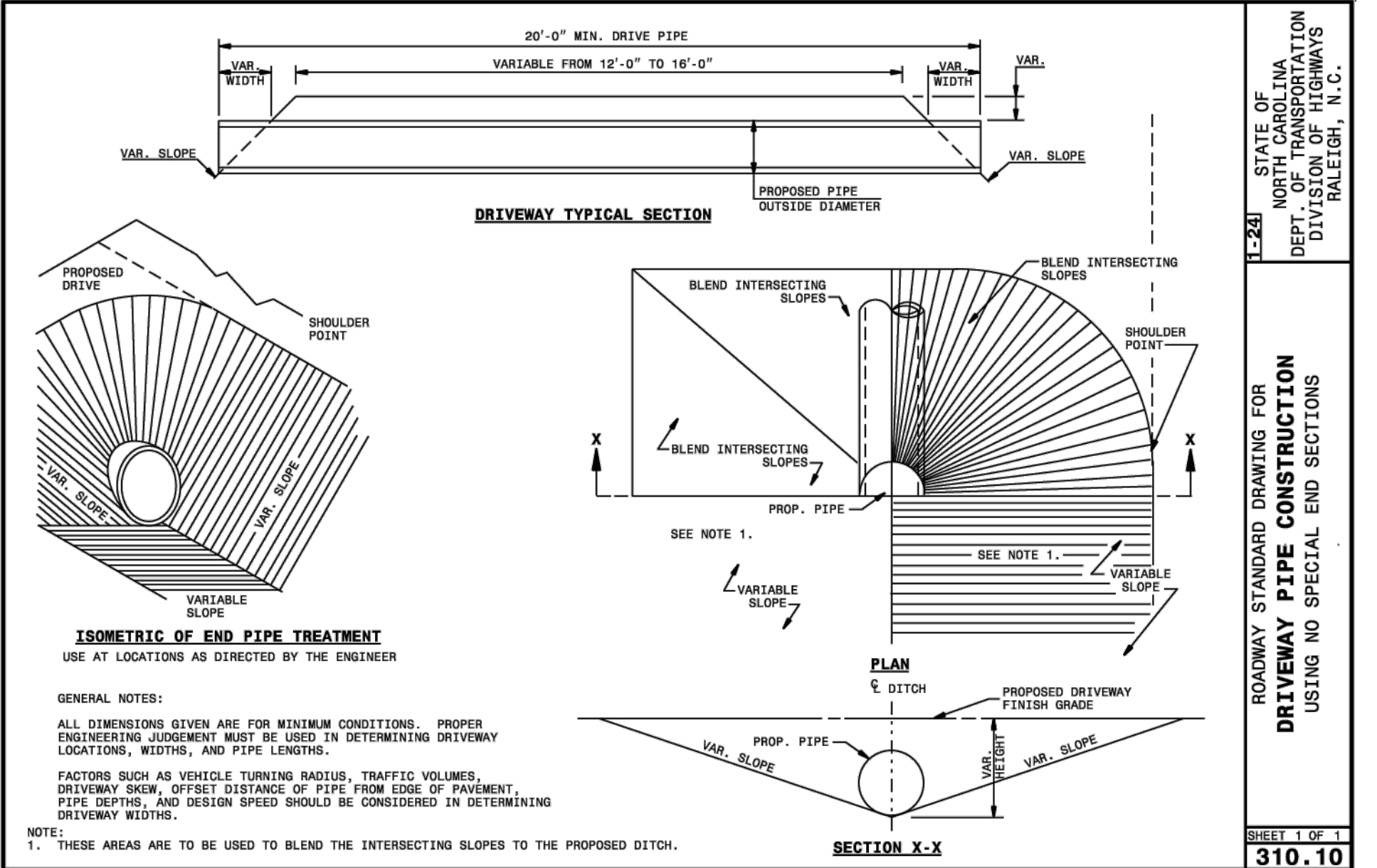


FIGURE 4
CBU PLACEMENT FOR SHOULDER SECTION RESIDENTIAL SUBDIVISION STREETS
CUL-DE-SAC



ISOMETRIC OF END PIPE TREATMENT
USE AT LOCATIONS AS DIRECTED BY THE ENGINEER

GENERAL NOTES:
ALL DIMENSIONS GIVEN ARE FOR MINIMUM CONDITIONS. PROPER ENGINEERING JUDGEMENT MUST BE USED IN DETERMINING DRIVEWAY LOCATIONS, WIDTHS, AND PIPE LENGTHS.
FACTORS SUCH AS VEHICLE TURNING RADII, TRAFFIC VOLUMES, DRIVEWAY SLOPE, OFFSET DISTANCE OF PIPE FROM EDGE OF PAVEMENT, PIPE DEPTHS, AND DESIGN SPEED SHOULD BE CONSIDERED IN DETERMINING DRIVEWAY WIDTHS.

NOTE:
1. THESE AREAS ARE TO BE USED TO BLEND THE INTERSECTING SLOPES TO THE PROPOSED DITCH.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR DRIVEWAY PIPE CONSTRUCTION USING NO SPECIAL END SECTIONS

SHEET 1 OF 1
310.10

PIPE 1 Outlet Structure Q25

| | |
|-------------------|------------------|
| FES No. = PIPE 1 | # of Barrels = 2 |
| Pipe Dia. = 18 in | |
| Q25 = 8.61 cfs | |
| V10 = 5.5 fps | |
| V25 = 5.67 fps | |

From Fig. 8.06.b.1: Chart Zone Use = 23in for chart = 2

From Fig. 8.06.b.2: D50 = 8 in, DMAX = 12 in, Riprap Class = B, Apron Thickness = 22.5 in, Apron Length = 11.3 ft, Apron Width = 3xDia = 4.5 ft Per Pipe

For multiple barrels, Zone and length calcs include 1.25 factor of correction.

PIPE 2 Outlet Structure Q25

| | |
|-------------------|------------------|
| FES No. = PIPE 2 | # of Barrels = 2 |
| Pipe Dia. = 18 in | |
| Q25 = 13.95 cfs | |
| V10 = 7.1 fps | |
| V25 = 7.3 fps | |

From Fig. 8.06.b.1: Chart Zone Use = 23in for chart = 2

From Fig. 8.06.b.2: D50 = 8 in, DMAX = 12 in, Riprap Class = B, Apron Thickness = 22.5 in, Apron Length = 11.3 ft, Apron Width = 3xDia = 4.5 ft Per Pipe

For multiple barrels, Zone and length calcs include 1.25 factor of correction.

ENTRANCE PIPE 3 Outlet Structure Q25

| | |
|-------------------|------------------|
| FES No. = PIPE 3 | # of Barrels = 1 |
| Pipe Dia. = 18 in | |
| Q25 = 1.21 cfs | |
| V10 = 3.6 fps | |
| V25 = 3.73 fps | |

From Fig. 8.06.b.1: Chart Zone Use = 18in for chart = 1

From Fig. 8.06.b.2: D50 = 4 in, DMAX = 6 in, Riprap Class = A, Apron Thickness = 18 in, Apron Length = 6.0 ft, Apron Width = 3xDia = 4.5 ft

For multiple barrels, Zone and length calcs include 1.25 factor of correction.

T-TURNAROUND PIPE 4 Outlet Structure Q25

| | |
|-------------------|------------------|
| FES No. = PIPE 4 | # of Barrels = 1 |
| Pipe Dia. = 18 in | |
| Q25 = 5.00 cfs | |
| V10 = 12.0 fps | |
| V25 = 12.16 fps | |

From Fig. 8.06.b.1: Chart Zone Use = 18in for chart = 2

From Fig. 8.06.b.2: D50 = 8 in, DMAX = 12 in, Riprap Class = B, Apron Thickness = 22.5 in, Apron Length = 9.0 ft, Apron Width = 3xDia = 4.5 ft

For multiple barrels, Zone and length calcs include 1.25 factor of correction.

BASIN PIPE 5 Outlet Structure Q25

| | |
|-------------------|------------------|
| FES No. = PIPE 5 | # of Barrels = 1 |
| Pipe Dia. = 24 in | |
| Q25 = 27.10 cfs | |
| V10 = 14.1 fps | |
| V25 = 14.37 fps | |

From Fig. 8.06.b.1: Chart Zone Use = 24in for chart = 2

From Fig. 8.06.b.2: D50 = 8 in, DMAX = 12 in, Riprap Class = B, Apron Thickness = 22.5 in, Apron Length = 12.0 ft, Apron Width = 3xDia = 6 ft

For multiple barrels, Zone and length calcs include 1.25 factor of correction.



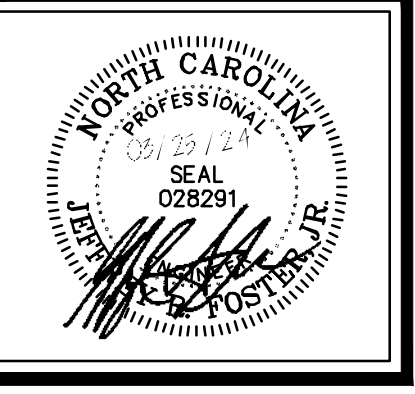
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CONSTRUCTION PLANS
ANFIELD ESTATES
NCDOT, STORM DETAILS & CALCS
CHATHAM COUNTY, NORTH CAROLINA

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